JUL 30 1917
UNIV

SCHOOL AND SOCIETY

EDITED BY J. McKEEN CATTELL

Volume VI | SATURDAY, JULY 28, 1917 | Number 135

CONTENTS

"Snap Courses" in College: Agriculture vs. Engineering: FREDERICK H. BLODGETT 91

The Community Fair—a Factor in Rural Education: S. G. RUBINOW 96

Educational Events:
Universities and State School Funds; School-board Organization in Wisconsin; Vocational Schools and the Need of Trained Men; Education and War Conditions. 101

Educational Notes and News 104

Discussion and Correspondence:
The National Institution for Moral Instruction: MILTON FAIRCHILD. *Military Drill in Australia:* HENRY L. BULLEN 108

Quotations:
French Universities and Our Scholars 111

The Four-quarter System 112

Special Articles:
The Grading of Students: G. E. MAXWELL 113

Societies and Meetings:
The National Education Association 118

$3.00 A YEAR | PUBLISHED WEEKLY | 10 CENTS A COPY

THE SCIENCE PRESS

LANCASTER, PA. GARRISON, N. Y.

NEW YORK CITY: SUB-STATION 84

Entered as second-class matter January 2, 1915, at the Post Office at Lancaster, Pa., under the Act of March 3, 1879

Teach Patriotic Conservation

"Every one who creates or cultivates a garden helps, and helps greatly, to solve the problems of feeding the nation."

—*President Wilson.*

Agee—Crops and Methods for Soil Improvement	$1.50
Bailey—Farm and Garden Rule Book	2.00
Bailey—Garden Making	1.60
Bailey—Manual of Gardening	2.00
Barnes—Suburban Garden Guide	.50
Eckles and Warren—Dairy Farming	1.10
French—How to Grow Vegetables	1.75
Gilbert—The Potato	1.50
Hunt—How to Choose a Farm	2.00
Lodeman—The Spraying of Plants	1.50
O'Kane—Injurious Insects	2.00
Roberts—The Farmstead	1.50
Streeter—The Fat of the Land	1.50
Stevens and Hall—Diseases of Economic Plants	2.00
Valentine—The Beginner in Poultry	1.75
Valentine—How to Keep Hens for Profit	1.50
Voorhees—Fertilizers	1.50
Warren—Elements of Agriculture	1.10
Wing—Milk and its Products	1.50

Write for the Farm and Garden Catalog

"Every housewife who practices strict economy puts herself in the ranks of those who serve the nation."—*President Wilson.*

Bruere—Increasing Home Efficiency	1.50
Campbell—Textbook of Domestic Science	.90
Clark—Care of the House	1.50
Gurney—Things Mother Used to Make	.50
Jordan—Principles of Human Nutrition	1.75
Kinne and Cooley—Shelter and Clothing	1.10
Kinne and Cooley—Foods and Household Management	1.10
Matteson and Newlands—Manual of Foods and Cookery	1.50
Sheaffer—Household Accounting	.65
Sherman—Food Products	2.40
Sherman—Chemistry of Food and Nutrition	1.50
Snyder—Human Foods and their Nutritive Value	1.25
Sullivan—Markets for the People	1.25
Williams and Fisher—Theory and Practice of Cookery	1.00

Write for the Homemaking Catalog

The Macmillan Company

NEW YORK BOSTON CHICAGO SAN FRANCISCO
ATLANTA DALLAS

SCHOOL AND SOCIETY

Volume VI SATURDAY, JULY 28, 1917 Number 135

"SNAP COURSES" IN COLLEGE: AGRICULTURE VS. ENGINEERING

THE continued interest on the part of the public at large in the various problems connected with food and clothing, on one hand, and with manufacture and transportation, on the other, is manifested in current or recent national and state legislation and in volumes of discussion over the various phases selected for individual consideration.

In contrast to such abortive efforts as the various attempts to fix by law the prices for agricultural raw materials, there have been some essentially constructive acts passed in legislative aid to the solution of the problems involved. Among these the Smith-Lever, the engineering experiment station, and the national highway laws are recent examples of Congressional legislation. Further examples are afforded in the several bills concerned with the problem of vocational education, which have been presented to both the national and state legislatures.

Within the several states increased numbers of schools of agriculture with rank of vocational high schools or of junior colleges, indicate the response on the part of the authorities to the public demand for additional educational facilities in this field. The experiment stations have also felt the pressure, and have established branch or substations in several of the states, to more closely study the crop and stock growing conditions in different sections. Current appropriation bills indicate in the items forming the list of activities to be supported, the great expansion in the field of "agriculture" which has taken place in recent years. Many or most of these expansions have come as a response to the need for greater or better information for the use of the food producers of the country, through pest control, improved plants or better methods of handling the gathered crops.

The various phases of applied mathematics commonly called the engineering sciences have been the subject of much less paternal legislation than have the applications of botany and zoology with the intimately associated geology forming the group conveniently termed agricultural sciences—though there may be some who feel that there is more of art than of science in this field at present. It may be of interest, and possibly suggestive, to discover why such unequal consideration has been given to different fields of activity such as just mentioned. There may be some inherent difference that has made it desirable to stimulate and aid the development of agriculture during a long period, while the engineering field has but now been recognized as deserving such support.

Language and literature, history and economics are essential fundamentals in which each individual in the schools receives more or less training according to his choice for later study. Continued work along one or the other of these topics places the student in the group of humanities rather than in the vocational fields represented by the several sciences, and their related industries.

Mathematics as a subject of study aside from its applied development, engineering,

may be placed in the same group as the above named, as in a measure fundamental to a good education; and physics, which is the general introduction to so many branches of engineering, furnishes the necessary connection between pure mathematics of the class room and the applied formulas of the testing room, shop and laboratory. In the last-named field it affords the basis for the study of chemistry, metallurgical chemistry, in the control of properties of metallic alloys through variations in composition.

There are thus three groups—language and literature, history and economics, mathematics and physics, which by common consent are regarded as essential elements in an education. To these other subjects are added in such sequence as the plans of the individual may indicate. Leaving the learned professions out of the discussion, the lines of productive and constructive education, essentially equivalent to vocational education of recent legislation and public discussion, fall within the divisions of the educational field termed agriculture and engineering in the paragraphs following. There will be points of contact or even of overlap between the two as designated, but that is unavoidable in any division of large groups of items upon general definitions.

Under agriculture will be included all topics connected with production of unmanufactured materials for food, shelter and clothing of people, and the distribution of such materials by marketing or commerce in so far as this concerns the welfare of the commodities themselves. Engineering would include, under a similarly broad definition, the mathematical phases of land areas (surveying, etc.), manipulation of materials for shelter and clothing, machinery and its application in commerce and industry. Under these broad limits, those topics which have to do with living things and their direct products[1] fall within one field, "agriculture"; while the indirect or manufactured products of the living things of the world, and the handling of the non-living features of daily life fall under "engineering."

The correlation between the several topics which may be listed together to constitute a "course of study" is lost sight of because of the multiplicity of titles in the several departments concerned, and the eagerness of each department to show its relative importance in the instructional work of the institution. In a study of the attitude on the part of students toward certain lines of study, and manifested by them in a disregard for the courses and for those selecting them, a solution was sought in an analysis of the group containing the observational sciences, by indicating more clearly the educational relations between the topics in this group. This involves a statement of the relationship between the topics in the other groups for comparison.

The following analysis of the two fields—agriculture and engineering in the sense above suggested—is offered in the way of a report of progress rather than as a fully developed plan in final form. The outline is largely developed from the further consideration of the plan suggested in *Science* for March 19, 1915,[2] extending the idea to include the engineering branches, in an effort to discover why the biological sciences are so often regarded as "snap courses" in the average college, and to find some possible change in method or presentation that might to some degree correct the popular disregard of the subjects concerned. It seems probable that a large portion of the

[1] Except such as pertain to fishing and hunting, in which unmodified natural supplies of food, and lumbering, in which the natural shelter materials are concerned.

[2] "A Course in Agriculture for Non-technical Colleges," by Frederick H. Blodgett.

feeling or indifference or lack of appreciation of worth in respect to the biological work is inseparable from the fact that the science itself is observational, in which the student looks on with a large margin of time in which to make any set test or to

INSTRUCTION GROUPS		
Foundation Subjects		
Languages and Literature		Mathematics (pure)
History and Economics		Physics
Specialized Subjects		
Agricultural Group		Engineering Group
Botany		Civil Engineering
Vegetable Anatomy	Plant Industry[3]	
Vegetable Physiology	Plant Husbandry	
Zoology		
Animal Anatomy	Animal Industry	Architecture
Animal Physiology	Animal Husbandry	
Geology		
Geodesy	Physiography	Highway Engineering
Geology	Mining	
Chemistry		
Chemistry	Agricultural Chemistry	Mechanical Engineering
Metals and Carbon Compounds	Chem. Engineering	Electrical Engineering
		Agricultural Engineering

complete any experiment required. Compare, for instance, the slow development of the auxanometer record with that of the tension-testing machine with a breaking test of bar steel in progress.

In biology an absence from the room of a quarter hour will ordinarily have little effect upon the results, as shown by the records in the students' note-books; but no such lack of attention is to be found in the testing room, as any instant may be the critical one, and the attention is kept keen by this interest. Further in the biological laboratory, a result once obtained is often only a general guide for the next set of results from the same experiment, as the reaction of living organisms to external conditions makes for an irregular series of results even if the trials are conducted under identical conditions so far as possible. This makes it necessary to make a number of repetitions of each experiment, and to derive averages in which variations are absorbed. In the testing laboratory, on the other hand, a single test with wire or rod of known composition sets a definite limit of strength with which subsequent trials will agree within close limits, so much so that any wide variation calls for an investigation of the specimen or apparatus rather than being excused by the individual behavior.

Under the convenient arrangement of parallel statements the contrasts between the two groups of study may be presented as follows:

[3] "Industry" and "husbandry" are here used to distinguish between those uses of plants or animals in which the plant or animal is itself the manufacturing unit, as lumbering, and textile fiber production, packing plants and tanneries, in contrast to the husbanding of the plants or animals themselves, as in the various forms of plant propagative business, or of feeding and breeding of live stock. In the "industry" the plant or animal is the factory, producing materials to be fabricated by man, in "husbandry," each is the product from the raw materials supplied under conditions controlled by man. This distinction may be at variance with some definitions, but is the one here intended in the use of the two terms.

AGRICULTURAL SCIENCES STUDY OF LIVING THINGS	ENGINEERING SCIENCES STUDY OF NON-LIVING THINGS
Basis	
Application of biology and geology to plant and animal life under man's control.	Application of mathematics to properties of materials, with form, composition, quality controlled.
Methods	
Qualities of objects not fixed, hence character of result of test uncertain; trial and error for each group of individuals.	Qualities of objects definite if once determined, result uniform, response to treatment constant, for a given composition.
Application	
Facts and principles established, but quantitative values not available; optimum condition of object or of treatment not determined by groups, qualities not predicable, outcome an "anticipation" only.	Principles applicable quantitatively to wide range of cases if once established experimentally; optimum of treatment determined by groups, qualities predicable, and outcome a practical certainty.
Results	
Duty of food, etc., in plant and animal development uncertain in individual cases, product indeterminate as to quality or quantity; no "laws" of cause-effect accurately formulated.	Duty of treatment in materials definitely established by tests, become basis of practise, exact prediction possible, cause-effect relations in demonstrable "laws," individual in agreement with mass.
Character of Errors	
Individual adjustment to environment allows influence of unknown factors to enter, making numerous tests necessary to establish facts and principles. Divergent results from reaction of organism to conditions of test. Many trials before eliminated.	Adjustments to environment not variable, with given composition and treatment, hence few tests establish facts and principles of broad application. Divergent results due to errors of composition or faults of method, often eliminated in next test.

The two science groups under discussion represent differences in public appreciation extending far back into early history, which in part explains the student attitude. Mathematics represents one of the oldest subjects of philosophic thought, while agriculture was and is still largely the application of rules of thumb to the recurring routine of nature. The engineering sciences represent the accumulated intelligence of generations, applied along lines of cumulative achievement in construction and in use of power. The agricultural sciences represent accumulated experience and observation of centuries which have only recently been subjected to classification and analysis, of which the basic principles are as yet but partly understood.

The mathematics underlying engineering has been the subject on which the great intellects of successive ages labored, extending the fields of application and checking the results of others. In agriculture empirical methods have been followed from father to son for generations, by the rural groups, accompanying the round of the seasons, with but little capacity or leisure for more than observational thought concerning their work. Thinking men discoursed upon unusual phenomena in nature rather than trying to discover causes or testing the causes assumed. But progress was scarcely possible toward the discovery of true causes until civilization had developed chemistry and other agents of research. These limitations should not, however, be still in force and it has been largely due to a desire to place the empirical art of agriculture upon a basis of scientific principles that the Land Grant Act of '62 and other acts subsequent to that one have been enacted. Engineering was already a definite body of scientific knowledge with practical applications when the first agricul-

tural legislation was passed, and as a profession gave an occupation to many. But agriculture has known the iron or steel plow scarcely 100 years and the other farm operations are proportionately new in their emancipations from the crooked-stick stage.

In agriculture the objects under observation and manipulation are constantly variable under change of climate and the adjustment of plants and animals to their environment. The living objects concerned in agriculture are continually undergoing adjustments automatically, making duplication of conditions of experiment or of mere crop raising, a serious problem if exact results are being sought. In most instances both subject of experiment and conditions of trial change, so that exact duplication of a given test is very difficult. But in engineering work the objects do not adjust themselves to external conditions, and the experimenter may repeat given tests indefinitely with essentially uniform results.

The idea that man can ameliorate his condition as to famine, pestilence and flood is so new that no accepted body of tested examples in world-wide agriculture has yet accumulated. The nature of the problem presented often permits two or more divergent but evidently sound conclusions to be drawn from identical experiments in different localities because some obscure condition is overlooked in one or the other case. (An example of this lies in the use of winter cover crops, which are so important a detail of good agricultural practise in the eastern states, but if attempted in the drier sections of the west, not only fails to improve the general condition, but may even ruin both winter and summer crops, as there is soil moisture enough for but one set of plants in a year.)

In engineering the field has, during the centuries of thought, crystallized into projects or problems in rather definite sequence as the basis of training in the field of knowledge concerned. There is therefore a minimum of manipulation chiefly needed for training in technique, while in biology and agriculture the trial and error method forms the principal method of attack upon the problems presented, with numerous repetitions to secure a body of results from which an average may be drawn for a conclusion. Little connection often can be found between successive exercises or tests in agriculture, while each test in engineering is the basis for the next step forward. Biological experiments are often isolated trials of living reactions, rather than important steps in definite sequence directed to an ultimate goal.

To adjust the two groups of knowledge will call for a more careful planning of the younger science, the formulation of definite problems on which cumulative evidence may be developed with the best prospect of benefit and which may be expected to establish the underlying facts and principles firmly.

The strength with which various farm or other operations in rural communities are still regulated according to the phases of the moon, illustrates the empirical character of much of the agricultural work even at the present time. Meteorological and crop records must accumulate for many years and be repeatedly discussed in connection with everyday events and occupations in press articles and in the school room before the real conditions will be freely accepted.

It should be the aim of agricultural science (or of biological science, of which agriculture is the field of application), to discover the sequence of details which together are necessary to build a foundation for the growth of the subject and for its devel-

opment into a branch of knowledge coordinate with the older topics.

For example, it should be possible to set an experiment in plant nutrition to determine the "duty" of the several elements in a normal nutritive solution in a manner comparable to the tests in the engineering laboratory by which the duty of certain alloy metals when added to a standard iron or steel body is determined. So many of the nutritive experiments demonstrate only the fact that certain substances are required, or are detrimental, but few have for their purpose, so far as the writer is aware, the demonstration of the function of the substance under experimentation in the activity of the plant.

It should also be possible to set experiments in the animal husbandry laboratory to show the lines of force effective in the several modes of hitching a team to draft a load, on the principle of the "parallelogram of forces" of the physics problems. It is thought likely that a student, seeing that some relation exists between the "power" originating in the hind legs of a horse and the relative height of the collar loop and of the clevis in drawing a plow, and in the length of the trace chain connecting the collar to the singletree, would feel a new interest in the problems of the agricultural laboratory. The dynamometer tests already customary in some laboratories to demonstrate the drag of different farm implements would be one source of quantitative values from which the parallelogram would be developed, the weight of the animal being a secondary factor of importance.

A series of connected experiments or tests, interrelated more or less in the manner of theorems in geometry, should be within the limits of pedagogical achievement, and efforts in this direction appear in some recent texts and laboratory manuals, though not clearly worked out as yet. Since the work is done on living objects, pure reason is of little value, and the type of relation shown in theorems is out of the question of course; but that one experiment shall be the basis for the next, and that the whole series shall be coordinated to a developmental sequence for the subject-matter and the objects experimented upon is certainly desirable. It seems probable that the disrespect so often felt by students either for the courses in the biological sciences themselves, or for the students who select such courses, will be largely diminished if there can be developed a more definite goal toward which the whole body of teaching and experiment may converge, each step being coordinated with each other step, and each essential to the whole.

FREDERICK H. BLODGETT
EXTENSION SERVICE,
A. AND M. COLLEGE OF TEXAS,
COLLEGE STATION, TEXAS

THE COMMUNITY FAIR—A FACTOR IN RURAL EDUCATION

No one questions any longer the fact that rural United States is making rapid progress along all lines. The "open country" of Roosevelt's Country Life Commission is throbbing with an undercurrent of restlessness for action and development, that breaks out now and then in an up-to-date, consolidated rural school, in a strong Farmers' Organization, in a Cooperative Association. The pulsations of rural progress are rebuilding the rural church upon a more permanent and a stronger foundation. Country and city are locking arms in a cooperative and joint campaign against influences that opiate. There are educational campaigns for better health, better sanitation, finer roads, more adequate schooling, larger salaries for teachers, greater crop yields, more uniform systems

of marketing, easier methods of obtaining credit, more satisfactory labor-saving devices for the home. The country must be, and is, up and doing.

With a rapidity that can scarcely be chronicled in actual time, rural United States is driving away ignorance, superstition, jealousy, selfish political dogmatism, petty neighborhood rivalry, prejudice and bias. In their places are coming the spirit of cooperation, the breadth of learning and culture, the wisdom of experience and information, the broad-gauged feeling of tolerance, the desire to work for common good. As a working factor in bringing about this change, the Community Fair is playing a big part in Rural Education.

While the Community Fair, as an educational institution, is not typical of one section of the United States, any more than it is of another, yet it is probably not an exaggeration to say that it thrives in the south more industriously than it does elsewhere. The south lends cheer and hospitality to the educational program of the Community Fair. It adds a tone of social importance to the program of instructive numbers. Because the south considers the Community Fair something more than a method of visual agricultural instruction, is one reason why Community Fairs flourish here. And then too, the south is making gigantic strides agriculturally, a phenomenal progress since the reconstruction days, and is gladly seizing every opportunity to promote all institutions and organizations which influence rural education.

I studied some Community Fairs in North Carolina recently, and I am describing them because they are tangible exponents of the progressive and responsive attitude of southern rural communities. The same era of progress is markedly noticeable in every southern state, where agricultural colleges are becoming the leading institutions of learning, helpful in service and purpose, radiating knowledge through their extension departments, and using the Community Fair as a medium for disseminating this information.

There will come a time soon when every rural community will have a Community Fair. Centered around the rural school, as the most public and democratic type of the community center, featured distinctly by agricultural and livestock products, supplemented attractively with school and community exhibits, furnishing a real and a local interest, the Community Fair is becoming one of the large educational factors of progressive rural development.

Wherever Community Fairs are emphasized will be found a representation of the various agencies, which are interested in agricultural development. The United States county farm demonstration agents assist in arranging the exhibits and in making out the premium lists. Specialists from the extension services of the agricultural colleges and the state departments of agriculture participate in the program. The states help financially by contributing generously to the prize lists. The Home Demonstration Agents of the Federal Department of Agriculture and the Rural School Supervisors from the State Department of Education show the local teachers how to arrange the products of the school, home and kitchen in the most attractive way.

The teachers themselves urge the boys and girls to painstaking effort in preparing school exhibits for the fairs. This is considered a part of the prescribed program of school work. Members of the Boys' and Girls' Agricultural and Canning Clubs bring their products to the Community Fair; farmers and their wives vie with one another in a good-natured spirit of friendly rivalry, in showing the things they have grown and made. There are speeches and lectures, musical numbers and recitational

features, discussions and conferences, and a composite view of the entire Community Fair, focused into a single mental image, would be symbolical of Progress, Education and Happiness.

Shorn of the cheap and vulgar midway amusements which detract from the real purpose of fairs, educational and informative in their scope, bringing folks together in the best of community spirit and cooperation, the rejuvenation of the Community Fair brings back the old type of real agricultural fairs, with plowing matches, auction sales of cattle, judging of livestock and farm products, farmers' meetings, boys' and girls' rallies, and those group meetings and discussions of things pertaining to farm life. There were many Community Fairs in North Carolina this fall; it was a delightful pleasure to visit them.

At Moss Hill and Sharron, two farming neighborhoods in one of the state's best agricultural counties, I visited typical Community Fairs, that feasted the eye, delighted the heart, inspired the mind, and drove home the desire to describe. The weather was charming, a genial mixture of sunshine and bracing air. The school houses were located on beautiful, natural sites, amidst upstanding towering pines, enshrouded in meshes of that most graceful of lichens, the so-called Spanish Moss. They looked like the patriarchs of old. Out in the road and in the neighboring fields were clustered the wagons, buggies and automobiles. The school grounds were congested with folks. I did not anticipate so many at a Community Fair. Those who do not believe in the possibilities of rural cooperation should attend Community Fairs in North Carolina.

The school houses were dressed up in their very best. A temporary platform had been constructed in each case, draped with the Stars and Stripes, esthetically beautified with ferns and mosses. There was even a player-piano, hauled out from the city, especially for the occasion. The chairs were grouped around for the presiding officers and the speakers. Temporary benches had been made for the day, arranged in an amphitheatre around the platform. Beyond the benches, out among the trees and in the fields, were the pens for the livestock and poultry. Overhead was the bluest of blue skies, with just a touch here and there of fleecy, shimmering, cumulous clouds. It was a perfect day!

For the morning session of the day, a pretty, dainty program had been arranged for the children. They were dressed in their best. Teachers and parents were proud of the appearance they made. The boys had scoured their faces and hands, had brushed their clothes, blackened their boots and plastered down their hair. The girls were in spotless white, with here and there a ribbon of outstanding hue. They marched in single file, then in pairs, keeping accurate time and rhythm while their teacher played the accompaniment. Then came the songs and recitations, the vocal and instrumental solos, the clever little monologues and catchy sketches.

While it is true that social and recreative features are very important phases of the Community Fair, and that one of the most fundamental purposes of the Community Fair is to bring country people together, yet the fair would lose its significance and its value if the program did not contain something instructional and informative. This must be essentially so, because every institution in the country, tangible or abstract, concrete or intangible, including the Community Fair, depends for its existence and success upon the degree of material prosperity which the country enjoys. To have left out the agricultural addresses and discussions, from the program which I am

describing, would have made the day incomplete and lacking.

Representatives from the Agricultural College and from the State Department of Agriculture had come to assist the county agent and the home demonstration agent with the program. It was the most carefully attended series of lectures that I have ever heard. Surely, these country people in North Carolina give a living denial to the statement we see so often, that "cooperation among rural people is a never-to-be-attained myth, glorious in its conception, but impractical in its usage." For here were all of the folks of the community, interested in one another, rubbing shoulders, swapping experiences, molding individual thoughts and opinions into one concentrated, unified idea and working toward one goal, the ultimate development of the community in which they lived.

My musings were rudely shattered by the ringing of the school bell. The morning program had been finished. It was dinner time and the meal was ready. What a feast met my eye! Where are those who say that southern farmers are not diversifying? There was barbecued pig, fried sweet potatoes, fried chicken, corn bread, hot biscuits that fairly melted in your mouth, piping hot coffee, home-canned preserves and cakes of all sizes, tastes and descriptions. The assembly had broken up into small groups of four and five. Tablecloths were spread on the ground, baskets were unpacked, the old colored "uncles" went from one group to another, carrying the barbecued pig and the coffee, and we fell to the task.

It is suprising how much companionship may be created through the medium of a good dinner. Keen appetites are first aroused and then satisfied. A geniality is produced. Folks look upon one another with a more smiling degree of intimacy than they did before. Human colds and frosts melt before the thawing approach of congenial conversation. Suspicions are thrust aside and forgotten in the atmosphere of appeased and satisfied physical hunger. Folks begin to discuss the things in which they are interested.

And so it was here. As I went from group to group greeting friends and acquaintances, here and there, joining in the conversation for a moment or two, I could feel the rumblings of movements for consolidated schools, for better salaries for those deserving teachers, for more earnest consideration of and attention to the work of the county farm and home demonstration agents, for a better and more homogeneous support of the school, for a unified, cooperative agricultural community. How true is the old adage that the way to a man's heart is through his stomach. We must first satisfy the physical wants and needs of our rural people; then we can look forward to and anticipate other changes which are equally vital and necessary.

Dinner was over and they were preparing for the parade. One can not think of a fair without a parade. The right kind of a parade is an educational factor. Parades and side-shows can be both entertaining and instructive. It goes without saying that they should always be elevating and decent. The one large, general objection to county and state fairs is that they do not really represent and carry out the fundamental purpose of fairs. They are entertaining and not instructive, and in a great many instances the form of entertainment is questionable. Community Fairs are so much more commendable, just for that very reason, in that they present educational and valuable programs, because of the clean type of entertainment with which they are associated, and because of

the fact that their educational policies are clearly defined.

And so, down the pike came the boys and girls, driving and leading their exhibits and floats. A prize had been offered for the most original and attractive float, and the boys and girls had placed an unusual amount of work and thought upon their individual parts of the exhibit. Members of the agricultural clubs, mounted on horses, with crimson sashes tied across their jackets, acted as marshals. A prouder set of leaders never came down the country road. Their steeds had been resurrected from the corn fields and old pastures, but what difference did that make? This was their parade, their fair, their day! Pigs had been oiled and brushed until they fairly shone and glistened. Calves had been curried and cleaned up until they scarcely knew themselves. Colts pranced around and shied nervously, as they came down the road. Even the poultry knew that they were on exhibition, accustomed as they are to being displayed.

The educational value of an exhibit, to the exhibitor, I feel, largely lies in the amount of constructive thought and labor placed upon the making of it. To the spectator, the value of an exhibit is measured by the information it gives. The magnetic thing about exhibits at small Community Fairs is that they are personal from all viewpoints. The exhibitor enjoys pardonable pride and egotism in showing the product he has grown, raised or made, to his personal friends, feeling in their intimate, responsive admiration, encouragement and stimulation for greater effort. And in the same way, the spectator would rather, by far, see the exhibits his immediate friends and acquaintances are showing, because of the easier and more intelligent criticism he can make, knowing the personal background of it all.

The parade this day was something more than a mere collection of personal exhibits. It was a large family, of many parts, in which every part was representative of some community institution, the whole being cooperatively welded together into one unit. It is not necessary to have an Aladdin's Lamp to produce a thoroughly enjoyable and worth-while Community Fair parade. A vivid imagination, an optimistic vision, farm wagons, livestock, farm produce, the products of the home and school, a bit of bunting here and there, a happy crowd of good, wholesome country folks, smiling participants, the local school band—and you hear yourself saying in the old familiar way: "Here comes the parade."

And then came the judging of the livestock and farm products, the products of the class-room and kitchen. This was the "school" phase of the fair. In a good many instances, the farmers and stockmen who were attending the fair, had come from long distances and at a personal sacrifice of time and work, especially to take in this part of the program. Many had brought their stock and products with them, early in the day, entering them in the competition. During the day, every now and then, a handful of men would stroll off the edge of the school grounds, select an "easy sitting" log, bite off a huge but apparently comfortable chew of North Carolina's best tobacco, and then argue about the good qualities of their respective stock and crops. I was too busy with my work in judging the livestock to note what the women were doing, but it is safe to assume that they were equally proud of the products they had entered.

It was an easy matter, therefore, to arouse interest in the judging, especially when the scoring and placing of the stock and products were accompanied by reasons and explanations. I am of the definite

opinion that in this phase of fair activities, which, after all, is the real, fundamental basis for holding fairs, the Community Fair is far superior to the county or state type of organization. At the smaller fairs, the men and women actually obtain an opportunity of hearing concrete discussions, based personally on the very stock and products that they themselves have brought to the fair. It really combines the extension service short course with the most effective laboratory material that can be obtained, the farmers' and farmers' wives' own, personal products.

Questions now come in a deluge from all sides. Usually the farmer is not a loquacious person. He is content with letting "the other fellow" do all of the talking. But when his animal is being criticized, or when his corn is being scored heavily, he wants to know the why and the wherefore. And the answer that he receives is correlated with the quality of his product in a way that makes this visual instruction the strongest feature of the Community Fair. He compares his colt with his neighbor's animal; his neighbor's cow looks more "typey" than his; he failed to win first prize for the best ten years of corn, because his sample lacked uniformity; his pig is not developed as a "six months" pig should be.

And so all down the line, he gets a visual lesson of what constitutes good crops and desirable livestock. The image stays with him, because he has seen products that were superior to his. And when the judge attaches the blue ribbon and awards the certificate of merit, the owner just seems to grow somewhat taller; he straightens up, hems and haws a little, shifts the quid of tobacco in his cheek, walks over to the prize animal, slaps it caressingly, and then hides his feelings beneath the most seemingly nonchalant attitude in the world, while a thousand emotions surge within.

The lectures and the judging are over. The boys and girls prepare for their athletic stunts. A ball game, potato and sack races, pig-calling contests, pony saddling and racing—how much these enjoyments mean to country boys and girls, isolated from social intercourse and lonesome for it, anxious to get together, wanting to play and speak with fellow creatures. That type of rural education which omits the social element factor from its program is a one-sided kind of an education.

The day draws to a close. The school teacher's farewell speech falls unheard. Men and women and boys and girls are busy packing, hitching up and harnessing. The horses begin to paw in their anxiety for home and feed. The sun is rapidly settling down behind the western hills. The shadows come. There is a wild confusion of mixed sounds, of good-byes, of invitations to call, or promises to come. The dust begins to rise in the road. There is a waving of hands. Wagons, buggies and automobiles go scurrying down the road. The Community Fair is over. What an educational blessing it has been to the folks of the country side!

S. G. RUBINOW

ASSISTANT STATE CLUB AGENT,
NORTH CAROLINA AGRICULTURAL
EXTENSION SERVICE,
WEST RALEIGH

EDUCATIONAL EVENTS

UNIVERSITIES AND STATE SCHOOL FUNDS

THE money paid out of the Virginia state treasury on account of public education in 1915 was $3,512,021, according to a recent Federal Census Bulletin, "The Financial Statistics of States," as quoted in *The Virginia High School Bulletin*. Of this amount, $125,000 went to the University of Virginia. It was 3.6 per cent. of the total State Education Fund. In Louisiana the university appropriation was 8.5 per cent. of the state school fund, in South Carolina 9.1 per cent., in New Mexico 10.9 per cent., and in Florida 12.4 per cent.

The state university in Wisconsin gets a full fourth of the state education fund; in Minnesota a third; in Iowa, Illinois and Arizona more than a third, and in Nebraska a little more than two fifths of it. The per cent. is smaller in other southern states mainly because they voted larger lump sums out of their state treasuries in 1915 for public education. The state school funds of these states were as follows:

Texas	$8,779,209
Kentucky	3,785,255
Virginia	*3,512,021*
Alabama	3,222,288
Georgia	3,037,316
Mississippi	2,614,961
Oklahoma	2,321,818
Arkansas	1,803,328
North Carolina	1,663,308
Tennessee	1,637,387

The following table prepared by Mr. C. C. Miller, of the University of North Carolina, covering the year 1914–15 is based on (1) Federal Education Bureau Bulletin, No. 6, 1916, and (2) Census Bureau Bulletin, "The financial statistics of states in 1915."

Rank	State Universities	Per Cent.
1.	Nebraska	40.5
2.	Arizona	37.7
3.	Illinois	36.4
4.	Iowa	33.7
5.	Minnesota	33.3
6.	Wisconsin	25.7
7.	Kansas	22.9
8.	Ohio	22.6
9.	Missouri	21.5
10.	Nevada	21.3
11.	Wyoming	21.0
12.	California	19.3
13.	Colorado	18.8
14.	West Virginia	17.7
15.	Montana	16.9
16.	Michigan	16.4
17.	Oregon	14.6
18.	Utah	12.8
19.	Florida	12.4
20.	Indiana	12.1
21.	Idaho	11.9
22.	Washington	11.6
23.	New Mexico	10.9
24.	South Dakota	10.8
25.	New York—Cornell	10.5
26.	R. I.—State College	9.2
27.	South Carolina	9.1
28.	Louisiana	8.5
29.	Vermont	8.2
30.	North Carolina	8.1
31.	Arkansas	7.9
32.	Oklahoma	7.3
33.	North Dakota	7.0
34.	Mississippi	6.6
35.	Penn. State College	6.57
36.	Maine	6.51
37.	Delaware College	6.1
38.	Tennessee	6.0
39.	Kentucky	5.4
40.	Georgia	5.1
41.	Texas	4.1
42.	*Virginia*	*3.6*
43.	Alabama	2.7
44.	New Jersey—Rutgers	.7

SCHOOL BOARD ORGANIZATION IN WISCONSIN

A study of school boards in the state of Wisconsin has been made by specialists connected with the State Department of Public Instruction and is quoted in the *School Board Journal*. The following is a summary of the findings in 68 of the 80 Wisconsin cities employing city superintendents:

10	boards have	3 members
1	board has	4 members
6	boards have	5 members
9	boards have	6 members
19	boards have	7 members
3	boards have	8 members
3	boards have	9 members
1	board has	10 members
3	boards have	11 members
3	boards have	12 members
1	board has	13 members
1	board has	14 members
1	board has	15 members
2	boards have	16 members
1	board has	17 members
1	board has	18 members
1	board has	20 members

With the exception of Milwaukee, which has a board of 15 members, and which was constituted by a new law some eight years ago, the boards of more than 12 members have all been in existence more than twenty years.

Cities having boards of large sizes are as follows:

Chippewa Falls	13 members
Watertown	14 members
Milwaukee	15 members
Grand Rapids	16 members
Beaver Dam	16 members
Oshkosh	17 members
Racine	18 members
Fond du Lac	20 members

Two cities not included in the tabulation above have separate boards for the grades and for the high schools. In each case, the elementary grades have three members and in one city the high-school board has five members and in the other nine members.

The manner of selection of school-board members is as follows:

Appointed by mayor	15 boards
Appointed by city council	11 boards
Elected by the people	16 boards
Elected by wards	12 boards
Elected at district meetings	1 board
Elected at annual meeting	13 boards
Total	68 boards

The facts concerning the length of term of school-board members in Wisconsin show that the commonly accepted board of a three-year term predominates as the following tabulation shows:

1 year	1 board
2 years	20 boards
3 years	43 boards
4 years	3 boards
Total	67 boards

Statistics of the number of women on school boards in Wisconsin are as follows:

None	43 boards
1	13 boards
2	9 boards
3	1 board
4	1 board
Total	67 boards

VOCATIONAL SCHOOLS AND THE NEED OF TRAINED MEN

TRAINING skilled mechanics and high-grade helpers is the next step in national preparation, according to the Department of the Interior, which has sent broadcast, through the Bureau of Education, an appeal to trade schools, manual training high schools, and all schools with shop-work departments, to prepare to meet the demands that will come for semi-technical workers in the metal trade and other industries. President Wilson, Secretary of Commerce Redfield and other government officials are also vigorously behind the effort to enlist vocational schools and classes everywhere in the establishment of this second line of industrial defense.

"It is impossible," says the Department's statement, "to forecast definitely the numbers of mechanics and operatives of various kinds that will be required. Officers of the Army, Navy, and Civil Service Commission are agreed, however, that during the next few months there will be an unusual demand for capable foremen, mechanics, and high grade helpers in a number of important occupations." The following are some of the workers who will be most urgently needed: Automobile mechanics; bakers; blacksmiths; boat builders; chauffeurs; cooks; draftsmen; electricians; engineers (steam); engineers (gas); machinists; motorcycle mechanics; painters; pipefitters; riveters; saddlers; shipfitters; shipwrights; tentmakers; textile workers; wheelwrights; stenographers; typewriters.

It is pointed out that the demands for these workers will come from the regular enlisted corps of the Army and Navy, from the enlisted reserve corps of the Army and Navy, from the eligible registers of the Civil Service Commission, and from private employers whose workers are called into government service. After the war there will also be a continued demand for similar workers in the reorganization and rehabilitation of industry.

Maintaining school throughout the summer months, encouraging students between 16 and 20 years of age now already enrolled to continue their training, and discouraging premature entrance into industry, are urged as necessary. The Bureau warns particularly against any relaxation of standards, pointing out that half-baked mechanics will in the end inevitably impair the efficiency of any branch

of the service. "Young persons now enrolled in technical courses should be urged to complete their courses, even at the cost of some temporary sacrifice, if necessary, in order that they may ultimately contribute the maximum of service when needed," say bureau officials.

Schools are urged also to offer special intensive courses through the summer months to train mechanics and machine operatives of various types.

There are over 500 special schools available for service of the kind indicated now on the lists of the Bureau of Education, according to the department's statement, and these schools have been asked to notify the Commissioner of Education at once as to the plans that will be adopted for carrying out the suggestions of the government.

EDUCATION AND WAR CONDITIONS

THE educational conference of school officials and teachers of Pennsylvania at State College took the following action:

Resolved: (1) That we strongly recommend that all possible efforts be made to prevent the efficiency of the state and nation from being impaired by absence of students from school and college when such absence is not absolutely necessary to the best interests of the country.

(2) That we recommend the continued enforcement of our present excellent child labor and attendance laws in the interest of the children of our state; but that we recommend that the state superintendent use his discretionary power to modify temporarily their enforcement if at any time the public welfare should demand such action.

(3) That the annual school term in each district be made as long as financial conditions and local needs will permit, and that the date of opening, where terms are ten, nine, or eight months in length, be fixed during the first week of September, and in all other districts during the third week of September; and that the period of compulsory attendance be made as long as local conditions will permit.

(4) That a central bureau, preferably controlled by the Department of Public Instruction, be authorized to act as a "clearing house" for the location of available teachers and that all superintendents of the state be urged to aid in this work.

(5) That the government be urged to consider the advisability of exempting from the draft such trained instructors in departments of our vocational schools as can not be replaced by others not subject to such draft.

(6) That we urgently endorse all wise efforts to conserve the food supplies of our country and to prevent the continued use or abuse of such supplies in the manufacture of anything which decreases our efficiency as a nation.

(7) That local needs should in every case determine needed modifications of the course of study to meet war conditions.

EDUCATIONAL NOTES AND NEWS

DR. EDWARD O. SISSON, formerly commissioner of education of Idaho, has accepted the presidency of the University of Montana.

DR. ERNEST H. LINDLEY, professor of psychology at the University of Indiana, has been elected president at the University of Idaho.

MR. CHAS. M. REINOEHL, formerly of the rural department of the State Normal School at Whitewater, Wis., has accepted the position of rural supervisor of Montana.

MEMBERS of the Board of Vocational Education to represent the government's interest in the administration of the affairs of education, as provided for by the Smith-Hughes bill passed by the last Congress, have been appointed as follows: Arthur E. Holder, of Iowa, for three years; Charles A. Greathouse, of Indiana, for two years; and James P. Munroe, of Boston, for one year.

IT is stated in the *Journal of Education* that the General Education Board has given $6,000 to the National Education Association for the use of the Department of Administration, of which O. M. Plummer, of the Portland Board of Education, is president. The committee to make use of this appropriation consists of Frank Irving Cooper, Boston,

chairman; Leonard P. Ayres, director of education of the Russell Sage Foundation, New York City; Charles E. Chadsey, superintendent, Detroit; B. A. Challman, state commissioner of school buildings, Minneapolis; Rowland Haynes, secretary to the Commission on Recreation, New York City; C. B. J. Snyder, architect for the Board of Education, New York City; Lewis M. Terman, Stanford University. Associated with the committee are William B. Ittner, architect for the Board of Education, St. Louis; John J. Donovan, city architect, Oakland, and F. A. Naramore, superintendent of properties of Portland.

AT the meeting of the board of regents of the University of Texas, held on July 12 and 13, President Vinson was continued as head of the institution, though without formal action to that effect on the part of the board. The following members of the faculty were dropped: Professors L. M. Keasbey, W. T. Mather and A. Caswell Ellis, and the secretary of the university, John A. Lomax. Of these most had been previously mentioned as slated for dismissal by the governor, but Professor Keasbey was charged with disloyal utterances at the recent pacifist meeting in Chicago. The governor has not indicated any method by which the funds for the maintenance of the university may be secured, but the regents are making plans on a restricted program to have the institution open for work in the autumn.

MR. VICTOR HORTA, architect, dean of the Royal School of Fine Arts of Brussels, honorary professor at the University of Brussels and member of the Academie Royale de Belgique, has been appointed Belgian Scholarship Committee professor of architecture in George Washington University and will, during the session of 1917–18, give a course on "The theory and practise of architectural composition." M. Poullet, Belgian minister of sciences and fine arts, desires that while Professor Horta is in the United States he be allowed to visit its schools of fine arts, with a view to reporting on them to his department.

PROFESSOR H. H. BARTLETT has received leave of absence from the University of Michigan for the next year and a half in order that he may take charge of the laboratories of the United States Rubber Co. in Sumatra. At a recent meeting of the board of regents of the university, a letter was presented from Professor Bartlett with respect to a clause in the contract between himself and the United States Rubber Company relating to certain fellowships to be established in the university during Professor Bartlett's absence by the company in order to retain certain of Professor Bartlett's graduate students. This clause received the approval of the board.

WE learn from the *Journal* of the American Medical Association that Surgeon James A. Nydegger, who is appealing to physicians of Maryland to enforce medical inspection of children under twelve years of age in the rural schools, states that if the rural-school system of Maryland and other states is corrected, 75 per cent. of the physical defects which to-day are barring men from service in the United States forces will disappear. Dr. Nydegger found that defective eyes, ears, teeth and throats are due largely to rural-school conditions and that the improper desks and seats have caused much spinal curvature.

MISS AMY WALKER, M.A., Smith College, has been appointed research assistant in the chemistry of foods, Massachusetts Institute of Technology, under the Ellen H. Richards Fund, for the year 1917–1918. The work will be carried on under the direction of Professor A. G. Woodman, and it is proposed to study chemical changes, with special reference to the nitrogen compounds, which take place when fish decomposes before and after heating at relatively high temperatures. This question is of particular interest in the sardine industry.

THE REV. HAROLD COSTLEY-WHITE, assistant master at Rugby School, has been appointed principal of Liverpool College.

THE New York Federation of Teachers' Associations has appointed Mr. Edward Mandel and Mr. Arthur B. Penhallow a committee to

make a scientific analysis of the new educational law this summer and report their conclusions at the opening of the schools next September in order that the entire teaching and supervising staffs will have the data needed to safeguard their rights.

BY virtue of a change in the Constitution of the Teachers' Union of the City of New York, candidates for the offices were nominated at a convention of the school representatives. The nominations up to the limit of five for each office were then submitted to the members on a printed ballot. The officers chosen for the coming year are: *President*, Henry R. Linville, Jamaica High School; *Vice-Presidents*—for Manhattan, Mrs. Johanna M. Lindlof, P. S. 183;—for Bronx, Max Schonberg, Evander Childs High School; —for Brooklyn, Jacob A. Rubel, P. S. 156;—for Queens, Nathan Abraham, Bryant High School; *Recording Secretary*, Mary T. Eaton, P. S. 11, Brooklyn; *Secretary-Treasurer*, J. Edward Mayman, P. S. 64, Manhattan.

THE state health commissioner of Massachusetts has appointed as a committee on the conservation of child life, Drs. David L. Edsall and William J. Gallivan, members of the public health council, and Dr. Lyman A. Jones, director of the division of hygiene of the state health department. As consulting members he has named Drs. Fritz B. Talbot, pediatrist and chief of the children's medical department, Massachusetts General Hospital; Richard M. Smith, Boston, pediatrist, assistant in pediatrics, Harvard Medical School; Walter E. Fernald, psychiatrist, superintendent of the Massachusetts School for the Feebleminded; William Healy, psychologist, director of the psychopathic institute of the Chicago Juvenile Court, and Miss Mary Beard, director of the Instructive District Nursing Association.

JULIUS OTTO SCHLOTTERBECK, dean of the College of Pharmacy of the University of Michigan, died on June 1.

DR. BERT H. BAILEY, since 1900 professor of zoology at Coe College, died on June 22, aged forty-two years.

THE death on June 22 is announced of Professor Leverett Mears, head of the department of chemistry at Williams College.

THE death is announced of M. E. Martin, superintendent of the schools of Preston county, West Virginia.

PROFESSOR ERNEST E. SEVERY, head of the modern languages department in Simmons College, Abilene, Texas, committed suicide on July 11. He had previously been engaged in educational work for the United States government in China and had owned and conducted a military institute in Nashville, Tenn.

JAMES AUGUSTUS BEATLEY, of the English High School in Boston, died on June 2 at his summer home at Boothbay Harbor, Me. His service at the English High School covered a period of thirty-nine years. In recent years he had been head of the department of German and also head of the department of music.

AT a meeting of the trustees of the Carnegie Foundation, held on May 18, the following resolution was passed which the president was directed to communicate to all associated colleges and universities:

Voted: That the age of 65 shall be looked upon as a minimum, but not as a required age for the retirement of officers and teachers of the associated colleges.

The president adds:

I may add that this action was taken in order to correct an evident misapprehension on the part of some of the associated colleges. Some of the associated institutions construed the naming of age 65 to mean that the Foundation advised compulsory retirement at this age. On the contrary this age was taken as a minimum and it is the opinion of many of the trustees that compulsory retirement should not come before 68 or 70. Sixty-five is only one year above the compulsory age of retirement in the army. Teachers generally feel that a compulsory retirement at this age would remove many men at a time when they were most capable of service. The trustees have directed that this information be sent to all associated colleges in order to make clear the fact that the age 65 was originally named only as a minimum age of retirement.

THE Boston *Evening Transcript* in an editorial article refers as follows to President Hyde: "These many years whenever Bowdoin

College has come to men's minds, then William DeWitt Hyde has entered in also. Indeed, so close had this companionship grown, that it is hard to conceive it in any way severed. Thirty-two years President Hyde had labored at Bowdoin. He came to its charge when the world still called him boy, and gave it his youth's greatest ardor. In the time of maturity he stood to its service, though calls pressed him from many sides—the world now witness to the worth of his manhood. For Bowdoin he kept the prestige of his later fame, the judgment of ripest experience, the strength of a faith in ideals that altered not with the seasons, nor yet with changing fashions in commerce. Through this connection the college flourished as at no other time in its history. Enrolment increased and many new buildings were erected. Behind Hyde's ideals was the force of a broad personality, the vision and magnetism of the born educator. They gave growth and life to the academic scene at Brunswick, tenaciously set though it was in a fashion some have presumed to call 'old.' The tradition President Hyde forged at Bowdoin will not be lightly outworn, nor rudely disturbed by the accident of his death. He and the college he loved will stand long in the companionship wrought by his service, made vital by his inspiration, and ennobled by his ideals."

THE National Defense Council's committee on universities and colleges held recently a conference with five representatives of the educational system of Canada, who went to Washington by invitation to give American institutions advice in marshaling educational resources for war service. The visiting Canadians were Sir Robert Falconer, president of the University of Toronto; Dr. Marshall Tory, president of the University of Alberta; Dr. Stanley McKenzie, president of Dalhousie University; Dean Frank J. Adams of McGill University, and Captain W. H. Alexander of the Canadian Army. Among other things, the conferees considered to what extent technical students and instructors should be released from educational institutions for military service, how educational courses can best be adapted to immediate war needs, and how students can best be employed to promote food production.

EMERGENCY contributions to augment the salaries of Cornell University teachers for this year have been made by appropriation from the alumni fund, the board of trustees on June 26 having adopted the report of a special committee recommending that $18,500 of the fund be used for that purpose. To all assistant professors who are married a gift of $150 each will be made. There are fifty-two of these, and the award to them will be $7,800. To all assistant professors who are not married a gift of $100 each will be made. Their number is eighteen and their aggregate award will be $1,800. To all married instructors, shop foremen and shop assistants, fifty-nine in number, will be given $100 each, an aggregate award of $5,900. To all unmarried instructors and shop foremen a gift of $50 each will be made. The number of these is sixty, and the aggregate award to them will be $3,000.

UNDER the auspices of a committee of the National Education Association there is being given at the University of Chicago, beginning on July 13, a series of lectures on thrift, the first lecture being on the subject of "Thrift as a means of industrial mobilization" and the speaker, Assistant Professor Harold G. Moulton, of the department of political economy at the University of Chicago. On July 18, Professor Harlan H. Barrows, of the department of geography, spoke on "Thrift in the utilization of national resources"; on July 19, Professor Frederick Shipp Deibler, of Northwestern University, discussed "The relation of thrift to the demand for labor"; on July 23, Professor Walton Hale Hamilton, of Amherst College, spoke on "Provision for the future," and on July 27, Associate Professor Harry Gunnison Brown, of the University of Missouri, on "Thrift *versus* exploitation in relation to public welfare." The three lectures in August on farm thrift will be given by Professor Edwin G. Nourse, of the University of Arkansas, whose book on "Agricultural Economics" was recently published by the University of Chicago Press.

UNDER the will of the late Jessie Gillender, the Metropolitan Museum of Art, New York, receives $50,000, to be known as the Arthur Gillender fund, and the income thereof is to be expended for the purpose of "the giving of explanatory lectures on the contents of this museum, by men eminent in the knowledge of the subjects and art objects proposed; one half of these lectures to be addressed to the interest and for the information of the general public, the other half to and for the benefit of artisans engaged in crafts demanding artistic study as expressed in contents of the Metropolitan Museum of Art."

THE New York Chamber of Commerce has finally approved modified resolutions of its Committee on Education criticizing the schools. According to *School*, this was the third time the chamber met to consider the findings of its committee. The first time President Willcox and Borough President Marks objected to the report on the ground that it was unjust and founded on opinions and information furnished Howard C. Smith, chairman of the committee, by teachers who would not make their names known. The result was that the report was considerably toned down. The resolutions adopted are as follows:

Resolved, first, that the board of education should have full control over all employees of the department.

Second, that the power of discharge of inefficient employees, whether belonging to the teaching force, or other employees of the department, should be absolute, subject only to protection against political disfavor.

Third, that the board of education should adopt such strenuous rules for the advancement of students of one grade to another as to impress thoroughly upon all students that they can not hope to be advanced without having first acquired a thorough knowledge of the subjects taught them.

The reduction of the board of education to seven members removed some differences of opinion. President Willcox, in answering the criticisms, said that the school system was making a constant improvement, but that the board of education was beset with difficulties, the chief one being financial. He summarized the report as one which created a "rather exaggerated impression of the deficiencies of the high-school graduates and of the number and importance of inefficient teachers." The report was adopted after a discussion of an hour.

THE Illinois legislature failed to pass any law on vocational education. The legislative committee of the State Teachers' Association and all other educational forces made a determined effort to get together on some bill which would receive sufficient support to be enacted into law. After many attempts at concord, it became evident that no large, comprehensive measure could pass. In the last week of the session the superintendent of public instruction, in conjunction with others, sought the enactment of a law which would provide a simple means for taking over the national funds and starting vocational education in conformity with the national plan. Then the old disagreements began to appear and a difference of opinion as to how the state vocational board should be constituted delayed the bill beyond the period when it could receive consideration.

DISCUSSION AND CORRESPONDENCE

THE NATIONAL INSTITUTION FOR MORAL INSTRUCTION

TO THE EDITOR OF SCHOOL AND SOCIETY: The executive committee of the National Institution for Moral Instruction has the task of putting through a research for an award of $20,000 in the field of character education, and desires assistance from all who are interested in discovering the very best methods for thorough character education of children in public schools. The plan for this "methods research" is rather complicated, and printed specifications will be sent to all requesting them. The title will be the "Interstate Character Education Methods Research." In each state there is to be appointed a "committee of selection," with the state superintendent as chairman if willing to serve. This committee is to select and appoint, with the approval of the executive committee, nine "collaborators," making 432 pro-

fessional educators as the body of students of methods of character education. The state group of nine collaborators is to work as a "team," to formulate together, in joint study, some plan for effective character education in the schools of their state. Each state is to contribute one set of plans in competition for the award of $20,000, and the division will be $4,000 to the chairman of the state group of collaborators, and $2,000 to each of the associates. All plans submitted are to be made available for study by all school workers interested in the problems of educational influence over character development. Most of the work by the state collaborators will be done for the sake of the benefits to personal and national life which will result from universal character education of children, because only nine can participate in the $20,000 award. There are no second and third awards. Therefore it is believed that very many others than those who will be appointed as official collaborators will be willing to help in this nation-wide research. It is desired that all who have done advance work in character education, and all who have special plans which they believe would prove influential if used, will send to the National Institution for Moral Instruction printed or written statements and advice which can be transmitted to the 432 official collaborators in this methods of research.

The scope of the material desired is indicated by the following quotation from the this methods research.

> The executive committee wishes to suggest to the collaborators that their study of the problems of character education of children be as complete and thorough as possible so that they will be likely to discover and combine in their plans all the elements essential to success in character education. It is not desired that extended arguments against methods not believed in by the collaborators be included in the matter submitted nor that an explanation of the psychology of character education be given save as it bears directly on methods advocated. A full explanation of the moral ideas to be inculcated will not be necessary, because this was the problem of the National $5,000 Morality Codes Competition, 1916–17. Methods of character education in their application to kindergarten, elementary school, junior and advanced high schools, and the preparation of teachers for character education, should be included in the researches of the collaborators. The following are typical of the questions which it will be proper for them to consider in preparation for their conclusions as to the best methods of character education:
>
> How to get children to understand and appreciate the wisdom of moral experience? How to develop personal convictions in matters of morality in the minds of the children themselves, and the will to live up to these convictions? How to help children form character habits? How to correlate school and home life so as to influence character development together? What character education should be given teachers themselves as a preparation for personal influence over character development in children? How shall teachers be enlightened as to the moral ideas to be inculcated, and how trained to efficiency in the use of methods of character education?
>
> There are many other questions which are vital to the problem of character education in its completeness, and it is the hope of the donor and of the executive committee that the various state groups of collaborators will make use of the occasion created by the offer of this $20,000 research prize to concentrate the attention of all the leading educators of their states, and of all friends of character education, upon this subject, in order that thorough, original and constructive thinking may result in effective plans for the development of this phase of education in the schools of their states and the nation.

Those who have worked out special plans for increasing the influence of their schools over character are asked to "do their bit" by sending in contributions to this research. In view of the great strain which the German war brings to civilization it is highly important that plans for better character education of the Nation's children be worked out and put to use.

MILTON FAIRCHILD,
Chairman Executive Committee
NATIONAL INSTITUTION FOR
MORAL INSTRUCTION,
WASHINGTON, D. C.

MILITARY DRILL IN AUSTRALIA

TO THE EDITOR OF SCHOOL AND SOCIETY: Recently there was brought to my attention a

reprint in your pages of a letter to school principals and teachers in Pennsylvania, issued by Dr. Nathan C. Schaeffer, superintendent of public instruction in that state, containing certain unwarranted reflections upon the humaneness of the Australian people, which in all fairness needs to be refuted.

Dr. Schaeffer writes:[1]

> In Australia military drill becomes obligatory at the age of fourteen and in New Zealand at the age of sixteen. In those countries thousands of boys have been thrown into military prisons, where they come in contact with undesirable characters and without any of the safeguards which the home throws around its children.

I know this statement to be untrue, from personal observation, having spent twenty years in Australia. The Australian Defense Act went into operation July 1, 1911. Attendance at public schools is not compulsory after the age of fourteen. Boys from twelve to fourteen year of age, inclusive, are trained ninety hours each year, fifteen minutes daily. These are the junior cadets. They do not wear uniforms, and the training is chiefly calisthenic. School teachers are instructed in physical training by special instructors, and in turn instruct their pupils. If a boy declined this detail of the curriculum, he would be in no worse danger than if he refused his grammar lesson.

Boys enter the senior cadets on the first day of July of the year in which they reach the age of fourteen, and continue until July 1 of the year in which they reach the age of eighteen. Senior cadets are drilled in halls or armories forty times a year, four hours a day on four days, two hours a day on twelve days, the remainder of time at night. They are not required to attend camp.

Penalties under the Defense Act do not affect the junior cadets (school boys). They affect the senior cadets (14–18) and citizen forces (18–26 years) alike. They consist of a money fine *or* "detention in military custody under enforced training and discipline"; that is, they are taken under military guard and made to make up lost time. The magistrates have ample discretion, and the more common method is to summarily require attendance at drills at stated times, without taking the delinquents from their homes. Observe also that boys under the age of sixteen are tried in children's courts; that parents, guardians and employers (not boys) are punished for preventing sons, wards or employees from attending drills; that conscientious objectors are exempt from drill; and that "persons convicted of crime or who are of bad character" are permanently disqualified from serving. There is no provision for imprisoning, or for "military prisons," and there are no barracks which might be used as prisons.

There was very little opposition to the system, as might be expected in a democracy more representative of the people than is our own, which realized its liability to attack. In the first year, 1911–1912, when what little opposition there might be was most keen, the total convictions among all grades under the Defense Act were only 2,936 in a body of youths and men numbering more than 170,000. These convictions included cases of parents failing to register their sons, employers discharging citizen-soldiers at times when the latter were in camp, shortages of drill, and convictions against one person more than one time in a year. However, as the novelty wore off, laxity of discipline developed, and while punishable, it is no more reprehensible than absence from drill on the part of our own militiamen, also punishable, but not by "imprisonment" in association with "undesirable characters." The average of convictions to enrollment is 3.7 per cent. from 1911 to 1914, mainly for non-attendance at drill, and no boys were "thrown into military prisons" of any kind whatever.

Dr. Schaeffer in the same letter also asserted that the military training act introduced by Senator Chamberlain of Oregon provided that children of twelve were liable to imprisonment for twenty days or a fine of $500 under that proposed act, yet section 15 reads:

> That a person liable to be trained for citizen cadet corps shall not be committed to jail in default of a pecuniary penalty imposed in this act,

[1] School and Society, April 16, 1916.

or of any costs awarded in the proceedings for any such offense, but, in lieu thereof, a constable may order that he be committed to the custody of a prescribed authority for such time, not exceeding the time for which the constable could, but for this section, have committed him to jail in default of payment of the pecuniary penalty imposed or costs awarded, as the court deems fit.

Here again, Dr. Schaeffer, in his eagerness to justify his opposition to military training in schools, misrepresents the facts. Neither in the Australian Defense Act nor in Senator Chamberlain's proposed act is there anything that is inhumane.

Please give me space for one other correction. Dr. Schaeffer states that universal military training in the United States would involve the employment of about one and one half million officers. Prior to the European War the total land forces of Australia, including 88,708 senior cadets, were 174,183, but the permanently employed force was only 2,774, including 150 cadets in the Military Colleges, regulars garrisoning forts, physical-training instructors, drill masters, clerical force and general staff. The citizen-soldiers are officered by citizen officers, and all receive a per diem allowance only while in camp, eight days per year for infantry, seventeen days for artillery and engineer corps. As you know, the population of Australia is about the same as that of Ohio, scattered over an area equal to that of the United States. This fact entails the employment of a larger supervisory force than would be necessary in a less extensive area.

HENRY L. BULLEN

NEWARK, N. J.,
June 20, 1917

QUOTATIONS

FRENCH UNIVERSITIES AND OUR SCHOLARS

"SOME nations export iron, some wheat, some coal," writes L. Houllevigue in the *Revue de Paris;* "France exports ideas." This is a boast that is familiar since the French Revolution, but that has seldom been connected, as here, with the French universities. Yet the writer furnishes evidence for his declaration that the universities play a direct part in the spreading of intellectual and moral light into other lands. In 1914 there were 6,132 foreigners enrolled in the higher institutions, one seventh their total attendance. The largest number were Russians, driven from home by the academic poverty there or the restrictions against Jews, or attracted by the intellectual *entente*. Rumania sent nearly 500; Turkey, in whose Syrian and Armenian dominions French schools flourish, sent over 300; Bulgaria nearly as many. The two reasons why we think of French influence without special thought of the universities are that their peculiar light is lost in the broader illumination of the whole French mind and imagination, and that comparatively few American students go to France to study. We know that the University of Paris is one of the greatest and largest in the world. But the mighty reputation of German universities since the days of Ticknor and Everett, and our kinship with Britain, have sent most of our students who go abroad to Germany and England.

Undoubtedly injustice has been done in this to France and ourselves; though as for the latter part of this statement, French culture, thanks to the sympathy, constructive quality, and communicativeness of the French mind, is more capable of making itself felt without formal instruction than that of any other nation. Adjuncts of drill, discipline and machinery are not necessary to enable us to apprehend almost to the full the qualities of the republic. But from the strictly academic point of view, our universities and their students lose much in that, among the leavening influences which come in from all the great European nations, the French contribution has hitherto been so small.

France at the present has her full share of great seats of learning. After the war of 1870, when Renan thought France dying, there was little provision for foreign students, and few opportunities for well-organized work leading to a definite goal; and this at the time that Wolcott Gibbs and Gilman were introducing German traditions anew into our teaching system. Even yet French universities are not

so wealthy as some of the German or American. But the French educational budget has risen from about five million to seventy-five million dollars yearly, exclusive of local appropriations; old universities have been revived and new ones established; Lyons, Grenoble, Toulouse and others have become noble institutions, and there is a prosperous university even in Algiers. In Paris public and private enterprise have built up the Collège de France till it is in the vanguard of science; the National Library has been enlarged with provision for research; museums, laboratories and scientific institutes have been founded in great numbers, and many special schools have risen in affiliation with or outside the University of Paris. Administrative changes, finally, have been undertaken with an eye to the demand of the foreigner.

A body of American university men, headed by Dean John Wigmore, of Northwestern University, has been organized for the foundation of a considerable number of American fellowships, and for the general encouragement of study in France. A volume devoted to that end, setting forth what "Science and learning in France" can do for the American matriculant, has been written by a group of American professors, each chapter dealing with a special field of scholarship. The result is an impressive display of academic resources, but being principally a catalogue, it does not present the salient arguments for French influence as a whole. From Germany our academic system has gained immensely in organization, in precision, and in interest in research, and it has retained or borrowed special Anglo-Saxon qualities. But the French subtlety, refinement and philosophical grasp, valuable in themselves, would also be a corrective for the narrowness that springs from too much organization and too rigid research.

It is plain that the war will leave French civilization in a position of special esteem. The world, wishing, in Charles W. Eliot's words, to see her national spirit not only preserved, but reinforced, will be ready to turn to her in a way that it would not before she had demonstrated her immense devotion to her ideals. M. Houllevigue expects a much greater immigration than ever before of British, North American and South American students, and appeals for provision to meet them. For the United States the effort of the Society for American Fellowships in French Universities is a resumption of an ambition that Franklin and Jefferson cherished until the French Revolution interrupted it. It will doubtless succeed, and will be symptomatic of much more than a mere appreciation of French scholarship.—*The Nation.*

THE FOUR-QUARTER SYSTEM

IN view of the frequent suggestions that educational institutions should remain open all the year, and should so organize their courses that students whose school work is from time to time interrupted during the present emergency may attend whenever they are free, and in view of the action of the conference of college presidents in Washington on May 5, the Bureau of Education has amplified brief descriptions of the four-quarter system as now in operation in several types of higher institutions which are given herewith.

University of Chicago.—The university year is divided into quarters: the autumn (October, November, December); the winter (January, February, March); the spring (April, May, to the middle of June); the summer (from the middle of June, July, August). For the year 1916–17 the exact dates for the opening of the four quarters were: Summer quarter, June 19, 1916; the autumn quarter, October 2, 1916; winter quarter, January 2, 1917; spring quarter, April 2, 1917. Students are admitted at the opening of each quarter; graduation exercises are held at the close of each quarter. The unit of work and of credit is a major, *i. e.*, a course of instruction involving four or five recitations or lecture hours per week for a full quarter, or double that number of hours for a term of six weeks. A *minor* is one half a major. Normal work is three majors per quarter, or nine per year of three quarters.

Leland Stanford Junior University.—Beginning with the academic year 1917–18, Stan-

ford will hold sessions practically continuously through the year, on the four-quarter system. According to the recommendation of the council, the academic year will be divided into four quarters, an autumn quarter beginning approximately October 1, a winter quarter beginning approximately January 1, a spring quarter beginning approximately April 1 and a summer quarter beginning approximately June 20. It is provided that the summer quarter may be divided into two terms for the convenience of those departments which wish to offer courses of term length in order to accommodate their special summer constituency. This is permissive only and applies merely to departments wishing to avail themselves of such a schedule.

Massachusetts Agricultural College.—During the past year the faculty has developed a project which has been approved by the trustees, whereby the college year will be divided into four terms or quarters, thus offering an opportunity to arrange work for college credit during the summer months. This appears to be distinctly progressive movement whereby the college plant, or such parts of it as can be utilized to advantage during the summer, will be used in the more adequate training of our students. It is expected, also, that by dividing the present college year into three terms instead of into two semesters better instruction can be given. It has been found that the task of readjusting our present curriculum to the new proposed plan is one of considerable magnitude.

George Peabody College for Teachers.—George Peabody College for Teachers divides its year into four quarters, each about twelve weeks in length, called respectively summer quarter, fall quarter, winter quarter and spring quarter. Any three quarters equal the usual college year of thirty-six weeks. Courses in the various subjects of instruction run through a quarter, with recitations at stated hours each week. In the summer and winter quarters, however, many courses are arranged to run daily through either term or half-quarter, as well. The hour is the unit of credit. This demands the equivalent of one hour of recitation and two hours of preparation therefor. Each course successfully completed entitles students to as many hours of credit for a quarter as the number of recitations per week. Two hours of laboratory work, as a general rule, involve one hour of preparation also and are then equal to one hour of recitation as defined above.

Indiana State Normal School.—The school year is divided into four quarters, denoted respectively as the fall, winter, spring and summer quarters, each twelve weeks in length. In the summer quarter the quarter or twelve weeks is the credit unit. Students carry the same number of subjects that they carry in other quarters, and while the courses offered constitute majors they are so organized for the most part that each course may be taken as two consecutive minors, thus breaking the work up into six-weeks units for those who must leave at mid-quarter, or for those who may desire to enter at that time.

SPECIAL ARTICLES

THE GRADING OF STUDENTS

Grading Standardized.—The grading of students is the most extensive measuring device now used in educational institutions, and its importance is as great as its extent. Not only is the scholastic, vocational and economic future of the student involved, but the educational standards of the institution itself are not only expressed but to a degree determined by the accuracy and adequacy of its grading system. Hence it is desirable that such a system be employed as will yield standardized, dependable and therefore uniform results among the teachers of the institution.

Previous to the formal grading plan adopted by the faculty in the fall of 1913, in the Winona State Normal School (where the four passing marks are A, B, C, and D), the extremes of variation of the per cents. of A's given by all teachers through two terms, fall and winter, 1911–12, were 0 and 25, the B's varied from 20 to 54, the C's from 23 to 53, and the E's or failures from 0 to 21. That is, while one teacher during these two terms did not give an A, another teacher at the same time with many of the same students gave 25 per cent. of A's; indeed, it was easier to get A's

from the second teacher than B's from the first. Other striking differences in standards among the teachers will be noted in the following graph:

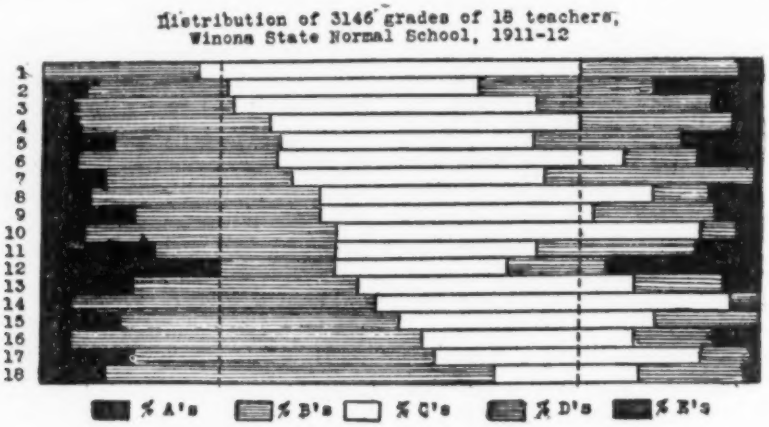

FIG. 1.

The grading which resulted in this degree of variation was the result of some such procedure as this: Each teacher had in mind a more or less definite personal standard or ideal of accomplishment for the students of the age of those coming under his tuition. By means of this mental standard he separately measured a student's work or papers. If the work or papers and the mental ideal were equivalent, a grade of excellent, or A, was given. A student whose results fell below this ideal standard received a mark intended to express the measure of variation from the the standard. This kind of standard is largely personal, because it grows out of the teacher's individual experience, his education, his view of life, and it is largely fixed by his knowledge of what previous classes of students of supposedly the same degree of ability have accomplished under like conditions. Therefore, when no two of the teachers reported above were using the same unit of measure it was not to be expected that the results of their measures even of the same papers would be uniform, though they might call their units by the same name.

Grading is an institution problem. It is not essentially a matter of academic freedom, and only in a small way a matter of taste. The Latin proverb, "There is no disputing about tastes," is scarcely more applicable to the grading of a student's school work than to the scoring of the batting average of a baseball player or the assessing of property for taxation. Yet our schools in general "are in the position," as Dr. Cattell says, "of a grocer, who should let each of his clerks give to customers, without weighing and without knowledge of market prices, what he believes to be a dollar's worth of sugar or tea."[1]

Factors Involved in Equitable Grading.—It was clear, therefore, that if the grading of students was to possess validity and command respect it must depend upon some more objective standard and thus exhibit greater uniformity in results, at least among the teachers of the same institution. The effort to refine this measure in the school involved a number of factors. The purpose here is limited to the enumeration of four of these factors, with a brief explanation of each.

First Factor.—The divisions of steps of the scale to be employed in measuring and expressing different degrees of merit were selected and defined.

When selecting the divisions it is to be noted that such words as good, very good, poor, etc.,

[1] *Popular Science Monthly*, Vol. LXVI., p. 367.

are not only inexact as division points on a scale, but that they are undesirable adjectives by which to qualify and express the work of a student, because they suggest moral as well as scholarly values. On the other hand, the per cent. plan for dividing the scale is unsatisfactory. It does not mean what it seems to mean, for if 70 is the lowest passing grade, then 70 is the lower limit of the scale and not zero as is implied. Moreover, the per cent. steps on a scale for grading school work are too fine to be applied by any yet known method of judgment. Dr. Starch found[2] that seven division points for passing grades are the maximum distinguishable by a teacher grading his own students, and he shows that a still coarser scale is required to secure reasonable uniformity of judgment among different teachers.

The following scale and meanings are commonly used, possess special merit, and were recommended for adoption: Let A stand for excellent work; B for commendable work; C for average; D for passing, and E for failing work.

Second Factor.—It was agreed to adjust the work of any class to the best effort of the middle half of the class.

While the work so adjusted is somewhat too difficult for one quarter and too easy for another quarter of the group, the loss is smaller for the class as a whole than it would be under any other plan of assignment. Moreover, special arrangements are always possible to the teacher for reducing any losses that may come to the members of the class in the two extreme quarters. In any event, the upper quarter will take care of themselves, and the lower quarter will profit, indeed most of them will pass.

This rule of adjusting the assignment to the best effort of the middle half of the group results in each class's fixing the degree of difficulty of its own work and the rate of its own progress, and largely discards the use of the teacher's mental standard of accomplishment and progress, as will be explained in the next recommendation.

[2] *Science*, N. S., Vol. XXXVIII., p. 360.

Third Factor.—It was planned to score each student's work and fix upon his standing by employing two factors, as follows: first and primarily, his rank in the class is determined, *i. e.*, the relation of his work to that of his fellows; second and secondarily, this measure or position is modified by the teacher's so-called absolute or mental standard which has been determined by previous work with students of like preparation.

The reason for limiting the importance of the teacher's mental standard in rating the student's work lies in the fact that the standard was itself originally developed out of the student-ranking process. It is the result of ranking large numbers of students in the order of their ability and results until a standard is derived which seems to be independent and absolute, but in reality it is still a relative standard. If, therefore, any student is to be graded by his rank or position it is better to rank him in relation to his own class than in relation to former classes the distance of whose work may have added enchantment to their record. Hence the member of any class clearly has the right to be judged primarily in terms of the ability of his own class, and secondarily in terms of the ability of former classes.

If the students making up the group are properly classified, so that they possess sufficiently similar abilities to enable them to work together effectively, they will at the end of the course rank in order from excellent to failing as a result of the adjustment of work to the best effort of the middle half. Nevertheless, in any case where the selection of students is unusual in any way, this arbitrary ranking may and should be modified by the so-called personal standard derived from the work of earlier groups of equal age and capacity. Such modification for differences in personal judgment as well as for factors of diligence, the overcoming of special obstacles, or a student's individual improvement, are also made possible through the coarser divisions of the scale as recommended above. With this somewhat coarse division of the scale, these modifications will not materially impair the general

uniformity among teachers in their distribution of grades.

After (1) having determined the number and meaning of the grades to be five, with A for excellent, B for commendable, C for average, D for passing and E for failing work; (2) having agreed to adjust the work to the best effort of the middle half of the class, and (3) having agreed to rank the students in the class from the worst to the best, then as a

Fourth Factor it was planned to assign to approximately one half the students the grade of C.[a]

This ratio was arbitrary, except that having settled upon C to represent average accomplishment, this ratio of one half can not in the long run be unduly increased or diminished, else it will no longer designate average ability. With the C grades thus assigned, the two pairs of remaining grades fall in about equal numbers above and below this middle C. While the measures of an individual class, especially when it is small, are not expected to conform strictly to the letter of this rule, it is expected that the cumulative records of a teacher in charge of several classes will closely approach these results. The provision for exceptions in rank is not so liberally interpreted as in the long run to result in a permanent tendency to depart from the rule itself.

Two considerations justify this distribution. First, the total grades in schools using the coarser divisions of the scale do, in the long run, as a practical matter of fact, approach very closely to this curve of distribution, as is shown by the cumulative records of the grades of institutions as a whole. For example, 8,969 grades, A to E, in elementary courses at Harvard, were distributed as follows: A, 7 per cent.; B, 20; C, 42; D, 21, and E, 7. In the Winona State Normal School 3,146 grades (1911–12) without any prearranged distribution were 9, 31, 38, 15, 7 per cent., respectively. During the fall and winter terms of 1912–13, 814 grades for the junior class alone were 4, 26, 44, 20, 6. Indeed experience gives this distribution of grades so commonly that it points toward some law unconsciously followed, and psychology and biology verify this supposition.

Thus the second suggestion leading to this distribution is the fact that scientific inquiries into the relations of human abilities of various kinds, both physical and mental, show that they are all distributed in the same way, namely, in the proportions represented by the normal curve or normal surface of frequency. That is, variation in scholastic performance is like variation in height, or variation in skill in hitting a mark, and is represented by the same kind of curve which illustrates the ratio of the numbers of heads from 0 to 4 which will turn up in the long run when four coins are tossed, namely, 1, 4, 6, 4, 1. Here again the number of cases must be sufficiently large to overcome special or unusual conditions. In sixteen throws one might not get this series, but in the long run 0 heads will appear 1 time while 1 head appears 4 times, 2 heads appear 6 times, 3 heads 4 times and 4 heads 1 time.

The record of grading at Winona for three years under the simple plan just set forth is as follows:

	Total	Per Cent. A	Per Cent. B	Per Cent. C	Per Cent. D	Per Cent. E
1913–14...	4,945	7	25	46	17	5
1914–15...	4,980	5	24	47	18	7
1915–16...	4,671	6	26	47	16	5

The distribution of grades by teachers for 1915–16 when compared with the distribution for two terms previous to the adoption of the plan (Fig. 1) shows a more nearly standardized measure of scholastic ability and acquisition in the grading of the school.

[a] This rule had been successfully used in the University of Missouri for several years.

1. Distribution of 99,443 grades, University of Missouri, under an assignment of C to the middle half of each class.

2. Distribution of 1,694 grades, Winona State Normal School, fall of 1913–14 (solid line), compared with distribution of 3,146 grades for two terms, 1911–12 (broken line).

3. Distribution of 197 practise-teaching grades, Winona State Normal School, 1912–13.

4. Distribution of 8,969 grades in elementary courses at Harvard University.

5. Distribution of 12,278 grades, University of Wisconsin, illustrating skewed curve, defended by

Dr. Dearborn, *Bulletin* of the University of Wisconsin, No. 312.

6. Distribution used in Reed College preferred by Dr. Foster, *Science*, Vol. XXXV., p. 887.

as distinguished. If, then, too many of the class are being marked high, their work is increased, the entrance requirements lowered, or the hours for the course reduced. More-

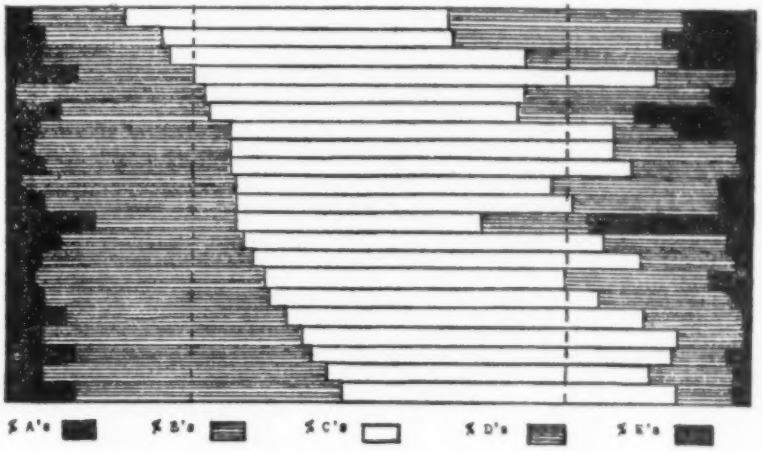

FIG. 2. Distribution of 4,367 grades, 21 teachers, Winona Normal School, 1915–16.

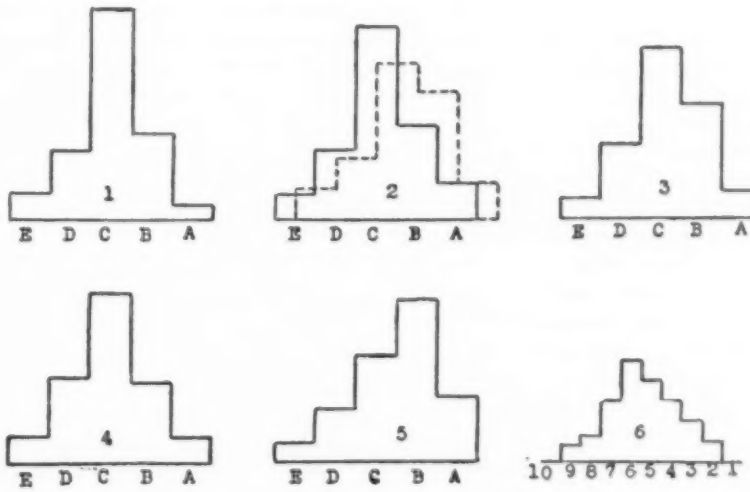

FIG. 3. Distribution of Grades in Several Schools.

Since two high marks, A and B, are designed to indicate distinction, to assign them in the long run to more than 25 per cent. of the students would mean to miss the thing aimed at and to characterize average ability over, the teacher who believes that his course attracts only the strongest students, and the teacher who believes that his form of instruction brings through a larger percentage of students with high accomplishments, must

quicken the pace of their classes. They ought still to adapt their pace to the best effort of the middle half.

Danger of Grading Too High.—It is to be noted in these distributions that the conditions surrounding the grading of students develop a strong tendency to skew the curve toward the high grades. The members of a class want high marks, and they never protest a mark that is too high; doubtful situations arise in which it is easier to give the student the benefit of the doubt; a teacher's pride is satisfied when he sees his students doing well as evidenced in their high grades. Some one has pointed out that it is a democratic tendency to place too many students in the distinguished class.

But some teachers hold that in more advanced classes of a school the number of high marks should exceed the number of low marks for the reason that the weaker students have been eliminated and because the students who remain are increasingly proficient. But the plan as outlined provides and requires that as a student or as a class advances in ability the work shall advance in difficulty at the same rate. If the higher classes rightfully deserve continuously higher grades, then colleges should grade higher than high schools, and high schools higher than elementary schools. The reason batting averages in the major leagues are no higher than in the minor is that major league teams have major league pitchers. The batting averages of the very select players who stage the world series of games are no higher than ordinary averages and they are distributed in the normal curve of frequency of a chance event.

But if, on the other hand, any teacher holds that the results of the work of any course are poor and unsatisfactory and that the distribution of grades as recommended overstates the worth of the class, he either secures an increase in the requirements for admission to the school or course, urges a lengthened time during which his students may pursue the subject, or else reduces the difficulty of the work itself. He has no right to fail a quarter or a third of his students in an effort to raise his standard. When a student is assigned to a group for a study, it is assumed that diligence will carry him through to success, barring a small per cent. of danger of failure. If a class is admitted to a course upon properly approved credentials, then the bulk of the class has a right to pass.

If, then, a school grades according to relative accomplishment, it ought not abandon the distribution of grades according to the normal curve. So far as teachers skew the curve toward the high grades, they abandon by so much the plan of ranking according to relative accomplishment, which, until absolute standards or units are established, should be regarded as the more satisfactory plan.

While the plan for the grading of students, as suggested here, involves difficulty and as an accurate measure of accomplishment leaves some things to be desired, nevertheless, it helps teachers within the institution to standardize requirements and gradings so that an A in one department or in one course largely represents the same scholastic achievement as an A in any other department or course. It is believed to be the most feasible and fairest measure available until objective normal-school scales, not unlike the Courtis tests in arithmetic, are determined for all courses and subjects in which the students are now graded.

G. E. MAXWELL
WINONA STATE NORMAL SCHOOL,
WINONA, MINN.

SOCIETIES AND MEETINGS

THE NATIONAL EDUCATION ASSOCIATION

The National Council of Education

Waste of food from the producer to the household.—J. A. BEXELL, dean, School of Commerce, Oregon Agricultural College, Corvallis, Ore. The most far reaching item of waste is robbing the soil of fertility. America is the most wasteful of all civilized countries. The average return per acre in the United States is $11.38 which is the lowest of any civilized country save Russia. The remedies for waste in fertility are very simple in principle. First, smaller farms; second, scientific rotation of crops; and, third, proper cultiva-

tion and fertilization. The slogan should be "Produce more at less cost and consume less." Farmers are just beginning to learn that they must mix brains with brawn. All who are engaged in productive enterprises must study costs and operations and must be ready to adopt those changes which are labor-saving and productive of economy and efficiency. The speaker cited some significant waste statistics. Government experts estimate that considerably over a billion dollars worth of food is wasted annually by insects alone. Iowa saves annually at least ten million dollars through the cow-testing association. Millions of dollars worth of eggs are wasted annually through the use of fertile eggs. Enormous waste of food results from improper connection between the producer and the consumer. Waste in marketing results from the improper tying up of capital and labor by a large number of useless middlemen and their removal from industry. Every person who is maintained by society who is not rendering a full quota of service is just that much waste. Attempts have been made for the last fifty years to reduce the waste in retailing by the cooperative store, but at least ninety-five per cent. of these ventures have been failures. The most successful scheme for cooperative buying is the C. O. D. Buying Circle. The waste in garbage assumes enormous proportion. This should be controlled by law and public inspection. Nothing would be more disastrous than a cessation of buying, both necessities and those conveniences which are of permanent value to the home and farm. During these years of plenty and high prices for the farmer, those personal conveniences should be provided which have so long been needed in the farm home.

Adaptation of courses in domestic economy and industrial arts to meet existing demands.—CHARLES H. DEMPSEY, superintendent of schools, Haverhill, Mass. It has in truth remained for the present era of war and high prices to bring us to a sharp realization of the need, both in the home, in industries and commerce, and in our national life, of true economy and forethought—of thrift. The cultivation of genuine thrift is emphatically one of our most important national and individual problems, and must be a task of every social agency we have. Three things the schools, as a branch of governmental activities, ought to do. First, they should serve as a means of publicity and dissemination of vital and practical knowledge. Second, the schools should furnish demonstrations of practical methods of meeting present demands for better provision and utilization of food products and other necessaries, both for our own use and for that of our allies in Europe. Third, the schools are the best existing organization not only for demonstration of practical individual economy, but also for the formation and fixing of habits of intelligent industry, efficiency and thrift. These three functions, the dissemination of knowledge, the demonstration of practical methods and applications, and then actual use and mastery by the recipients—pupils or citizens—constitute ideal service and should go hand in hand. Our most acute needs of this sort are evidently these: more abundant supply of staple foods; more general conservation of food by storing, canning, etc.; more economical use of food as to quantity and kinds, balanced rations, use of substitutes, nutritive values; avoidance of waste due to difficulty of marketing, spoiling, poor cooking, lavish serving, ignorance about foods; elimination of excesses in condiments, fancy foods, candies; practical knowledge of clothing, textiles, foot wear, house furnishings and the like; practical knowledge of use of household equipment, fuel, light; knowledge in marketing and purchasing, supplemented by judicious government control of prices.

THE DEPARTMENT OF HIGHER EDUCATION

Relation of the governor to the Oregon public educational system.—JAMES WITHYCOMBE, Salem, Ore. Oregon, in establishing her system of public schools, wisely recognized this principle and has ever held it sacred. An examination of the laws of this state shows that while the governor is chairman of the State Board of Education, his

duties are largely advisory, and the duties of administration are left to a superintendent of public instruction. Even if the governor should be a man preeminently fitted by training and occupation to direct the schools of this state, his duties are such that he could not well give the schools more time without neglecting many vital interests of the state which by virtue of his office he must give daily attention. The educational duties of the governor of this state are divided into two classes: He is ex-officio chairman of the State Board of Education, and as governor he appoints several important boards. The State Superintendent has been for the past four years working out a definite policy for increasing the efficiency of the rural schools. Many improvements have been made through a scheme of standardization, but the superintendent realized that the short term of many of the rural schools was hindering the work of the entire system. He proposed a law requiring each district to have not less than eight months of school each year. The governor as a member of the State Board of Education was in a position to know the educational needs of the state, and to give the policy of the State Department of Education an intelligent and effective endorsement when the whole matter was presented to the Legislature.

Critical present-day issues in administration of state higher education.—B. R. BUCKINGHAM, State Board of Education, Madison, Wis. The tendency in a state educational administration throughout the country is toward centralization in a board of education. Distinction must be made, however, between the statutes and their enforcement. Plans for state administration grow out of the increasing expensiveness of higher education, and the difficulty of obtaining data on a reliable and uniform basis. A great part of the work of an administrative board to-day must consist in investigation. It is necessary to proceed slowly in order to avoid the destructive effect of crudely-made standards. A wide study of educational economy is necessary as a basis for administration. The state authority should represent both the people and the educators. The great issue for a state authority having jurisdiction over several types of higher education is to secure their proportional treatment and to see to it that each has an equal opportunity to fulfill its mission. In appraising the work and needs of institutions, there is urgent demand for scientific units. At present the student-hour as a unit of work is the best. It has not, however, the same value in different types of work, and a system of weighing should be worked out. Because of lack of common knowledge among institutions, there is little use by any of them of the experiences of others. A function of a state administrative authority might properly be the gathering of material and the pooling of experiences. Again it should be the duty of the state administrative authority to interpret to the people the educational institutions. Failing to understand them, many become impatient of their cost, when a knowledge of their benefits and uses would allay such a feeling. Probably a good state administration will obtain from the people more money for education than they have been spending. It will save money now being wasted, but it will use more than it saves for other and better uses. It will show the people the efficient use of their money, and the value of the new and broader fields which it will open up. While giving each institution a fair chance, it will make clear the value of each institution and the rightness of its organization. In order to do these things, the state administrative authority must be continuous and reasonably unaffected by the veering winds that blow about the State Capitol. Men should be carefully selected and well enough paid to insure their competence. Their tenure should be such that they may gain the benefit of their own experience and have the courage of convictions without the necessity of protecting themselves personally. They should be capable of appreciating fully the educator's point of view, while at the same time they should not forget that they exist in order that the people's point of view may likewise be taken.